10/511901
DT01 Rec'd PCT/PTC 20 OCT 2004

CLAIM AMENDMENTS:

1-16 cancelled

17. A sensor for detecting a fog-like medium, the sensor comprising:

a first transmitter for transmitting first signals along a first transmission axis and towards the fog-like medium;
a second transmitter for transmitting second signals along a second transmission axis and towards the fog-like medium;
a receiver for receiving said first and said second signals subsequent to interaction with the fog-like medium, said receiver receiving said first and said second signals along a receiver axis, wherein said receiver axis intersects said first transmission axis at a first point of intersection and said receiver axis intersects said second transmission axis at a second point of intersection; and
an evaluation unit communicating with said receiver to detect the medium in response to reception of said first and said second signals.

18. (new) The sensor of claim 17, further comprising a first optics to focus said first signals emanating from said first transmitter into a first beam travelling along said first transmission axis, a second optics to focus said second signals emanating from said second transmitter into a second beam travelling along said second transmission axis, and a third optics to select portions of said first and said second signals which travel toward said receiver along said receiver axis and to pass said selected portions on to said receiver.

19. (new) The sensor of claim 18, wherein said first beam, said second beam and said selected portions each form substantially cylindrical, linear beams.

20. (new) The sensor of claim 17, wherein said first and said second transmission axis do not intersect.

21. (new) The sensor of claim 20, wherein said first and said second transmission axes are substantially parallel to each other.

22. (new) The sensor of claim 17, wherein said evaluation unit is adapted to determine a density of the medium by comparing received intensities of said first and said second signals with transmitted intensities of said first and said second signals.

23. (new) The sensor of claim 17, wherein said first and said second transmitters are infrared transmitters and said receiver is an infrared receiver.

24. (new) The sensor of claim 18, further comprising means for mounting the sensor to a window or a windshield.

25. (new) The sensor of claim 24, further comprising optical coupling means disposed between said window or windshield and at least one of said first optics, said second optics, and said third optics.

26. (new) The sensor of claim 17, further comprising a circuit board on which at least one of said first transmitter, said second transmitter, and said receiver are disposed.

27. (new) The sensor of claim 17, wherein the sensor is adapted to generate a signal for controlling a system to detect a fog-like medium.

28. A method for detecting a fog-like medium, the method comprising the steps of:

a) transmitting first signals along a first transmission axis and towards the fog-like medium;
b) transmitting second signals along a second transmission axis and towards the fog-like medium;
c) receiving said first and said second signals along a receiver axis and subsequent to interaction with the fog-like medium, wherein said receiver axis intersects said first transmission axis at a first point of intersection and said receiver axis intersects said second transmission axis at a second point of intersection; and
d) communicating with said receiver to detect the medium in response to reception of said first and said second signals.

29. (new) The method of claim 28, further comprising determining a density of the medium by comparing an intensity of transmitted signals to an intensity of received signals.

30. (new) The method of claim 28, further comprising time delaying or alternating said first signals with respect to said second signals.

31. (new) The method of claim 28, wherein said first and said second signals are infrared signals.

32. (new) The method of claim 28, wherein a signal is issued when the medium is detected.

33. (new) A sensor for detecting a medium, the sensor comprising:

a transmitter for transmitting signals along a transmission axis and towards the fog-like medium;
a first receiver for receiving said signals subsequent to interaction with the fog-like medium, said first receiver receiving said signals along a first receiver axis, wherein said first receiver axis intersects said transmission axis at a first point of intersection;
a second receiver for receiving said signals subsequent to interaction with the fog-like medium, said second receiver receiving said signals along a second receiver axis, wherein said second receiver axis intersects said transmission axis at a second point of intersection; and
an evaluation unit communicating with said first and said second receivers to detect the medium in response to reception of said signals in said first and said second receivers.

34. (new) The sensor of claim 33, further comprising a first optics to focus said signals emanating from said transmitter into a first beam travelling along said transmission axis, a second optics to select first portions of said signals which travel toward said first receiver along said first receiver axis and to pass said selected first portions on to said first receiver, and a third optics to select second portions of said signals which travel towards said second receiver along said second receiver axis and to pass said selected second portions on to said second receiver.

35. (new) The sensor of claim 33, wherein said first beam, said first portions and said second portions each form substantially cylindrical, linear beams.

36. (new) The sensor of claim 33, wherein said first and said second receiver axes do not intersect.

37. (new) The sensor of claim 36, wherein said first and said second receiver axes are substantially parallel to each other.

38. (new) The sensor of claim 33, wherein said evaluation unit is adapted to determine a density of the medium by comparing received intensities of said signals with transmitted intensities of said signals.

39. (new) The sensor of claim 33, wherein said first and said second receivers are infrared receivers and said transmitter is an infrared transmitter.

40. (new) The sensor of claim 34, further comprising means for mounting the sensor to a window or a windshield.

41. (new) The sensor of claim 40, further comprising optical coupling means disposed between said window or windshield and at least one of said first optics, said second optics, and said third optics.

42. (new) The sensor of claim 33, further comprising a circuit board on which at least one of said transmitter, said first receiver, and said second receiver are disposed.

43. (new) The sensor of claim 33, wherein the sensor is adapted to generate a signal for controlling a system to detect a fog-like medium.

44. (new) A method for detecting a fog-like medium, the method comprising the steps of:

    a) transmitting signals along a transmission axis and towards the fog-like medium;
    b) receiving said signals subsequent to interaction with the fog-like medium along a first receiver axis, wherein said first receiver axis intersects said transmission axis at a first point of intersection;
    c) receiving said signals subsequent to interaction with the fog-like medium along a second receiver axis, wherein said second receiver axis intersects said transmission axis at a second point of intersection; and
    d) detecting the medium in response to reception of said signals.

45. (new) The method of claim 44, further comprising determining a density of the medium by comparing an intensity of transmitted signals to an intensity of received signals.

46. (new) The method of claim 44, further comprising time delaying or alternating signals received by said first receiver with respect to signals received by said second receiver.

47. (new) The method of claim 44, wherein said signals are infrared signals.

48. (new) The method of claim 44, wherein a signal is issued when the medium is detected.